

REMARKS

Claims 14-27 are all the claims pending in the application. Previously claims 1-13 were canceled without prejudice or disclaimer. Reconsideration and allowance of all the claims are respectfully requested in view of the following remarks.

Claim Rejections - 35 U.S.C. § 103

The Examiner rejected claims 14, 17, and 25-27 under §103(a) as being unpatentable over US Patent 5,612,495 to Shimada et al. (hereinafter Shimada) in view of US Patent 4,599,898 to Beer (hereinafter Beer). Applicants respectfully traverse this rejection because the references fail to teach or suggest all the elements as set forth in the claims.

Claim 14 sets forth a structure inspection apparatus comprising a vibration detector and a display device, wherein the vibration detector comprises a detection circuit for detecting a maximum amplitude of an output signal of the vibration detector, and wherein the display is for displaying the maximum amplitude of the output signal of the vibration detector.

In contrast to that set forth in claim 14, each one of Shimada and Beer teaches using an average of the detected signals, as opposed to a maximum value. See the discussion set forth below in connection with claim 26. Accordingly, each one of Shimada and Beer fails to teach or suggest a detection circuit as set forth in claim 14.

In light of the above, Shimada and Beer fail to render obvious Applicants' claim 14. Likewise, these references fail to render obvious dependent claims 17 and 25.

Claim 26 sets forth a structure diagnosis method for detecting an internal defect in a concrete structure, the method comprising: converting a vibration generated on a measuring surface into a corresponding electric signal thereby to calculate a maximum amplitude of a component in a predetermined frequency range of the electric signal. A vibration component of a low frequency becomes remarkable in an abnormal part in which there exists an internal defect. Thus, by focusing on a predetermined frequency, for example a low frequency of several kHz or less, in comparison with a normal part at the same band, the magnitude of response of the

abnormal part reaches ten or more times that of a normal part.¹ Accordingly, there can be determined whether there is a defect or not simply by determining the maximum amplitude of the vibration, whereby a simplified detection circuit can be used.

In contrast to that set forth in claim 26, each one of Shimada and Beer determine an average value of an electrical signal from the vibration, thereby increasing the signal/noise ratio. See Shimada at col. 3, lines 30-41, for example, and Beer at co. 6, lines 12-19. Because Shimada and Beer determine average values to reduce the error, more complicated circuits are necessary than in the presently claimed invention which uses a simple maximum to determine whether there is a defect or not.

In light of the above, even assuming that one of ordinary skill in the art were motivated to combine Shimada and Beer as suggested by the Examiner, any such combination would determine an average value of the signal produced by vibration; it would not include calculating a maximum amplitude of a component in a predetermined frequency range, which is then used to determine the existence or absence of an internal defect, as set forth in claim 26.

For at least any of the above reasons, Shimada and Beer fail to render obvious Applicants' claim 26. Likewise, these references fail to render obvious dependent claim 27.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 15, 16, and 18-24 would be allowed if rewritten in independent form. However, because of the belief that claim 14 is allowable as written, Applicants have not rewritten claims 15, 16, 18, and 24, in independent form at this time.

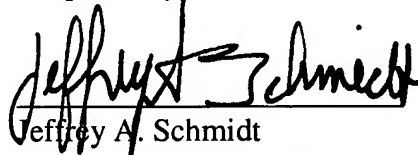
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

¹ Specification at page 15 1st and 2nd full paragraphs.

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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